11/18/04

2631

Express Mail No.: EV 324 920 219 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Daoben Li

Serial No.: 09/966,683

Filed: September 27, 2001

For: A SCHEME FOR SPREAD SPECTRUM MULTIPLE ACCESS CODING

Confirmation Number: 5473

Group Art Unit: 2631

Examiner: Jean B. Corrielus

Attorney Docket No.: **061000-0006**
(Formerly 10748-006-999)

AMENDMENT UNDER 37 C.F.R. § 1.111

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In response to the Office Action mailed on February 6, 2004 in connection with the above-captioned patent application, please enter the following amendments and consider the following remarks. Applicants submit herewith a corrected formal drawing for Fig. 1.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR § 1.136(A)

It is respectfully requested that the time for response to the Office Action dated November 18, 2003 be extended for a period of 3 month, from May 6, 2004 to and including August 6, 2004.

The fee for this extension is estimated to be **$475.00**. Please charge the required fee and any additional fees required for extensions of time during the pendancy of this application to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310. A copy of this sheet is enclosed.

11/22/2004 AWONDAF1 00000106 500310 09966683
01 FC:2253 490.00 DA

Listing of claims:

1-9. (Cancelled)

10. (Previously amended) A method of generating Large-Area Code-Division-Multiple-Access (LA-CDMA) codes, the method comprising:

generating a plurality of pulse-trains each comprising a plurality of pulses separated by intervals, wherein each one of the intervals between pulses of a pulse-train in said plurality of pulse-trains is unequal in duration to each other interval between pulses of the pulse-train; and

assigning a polarity to each of the pulses thus forming at least one code word from each of the pulse-trains.

11. (Previously presented) The method of claim 10, wherein each pulse has a same duration, T, and wherein at least one of the intervals is longer than a shortest one of the intervals by an odd integer multiple of the duration T.

12. (Previously presented) The method of claim 10, wherein the duration of any one interval is unequal to a sum of the durations of any other two intervals.

13. (Cancelled)

14. (Previously presented) The method of claim 10, wherein each code word is unique within the plurality of code words.

15. (Previously presented) The method of claim 10, wherein:

an auto-correlation function of any one of the code words has a zero-correlation window;

and a width of the zero-correlation window is equal to two times a shortest one of the intervals.

16. (Previously presented) The method of claim 10, wherein a cross-correlation function between any two of the code words has side lobes equal to one of zero, plus amplitude squared and minus amplitude squared.

17. (Previously presented) The method of claim 10, wherein: a cross-correlation function between any two of the code words has a zero-correlation window; and

a width of the zero-correlation window is equal to two times a shortest one of the intervals.

18. (Previously presented) The method of claim 10 further comprising increasing a duty ratio of each of the code words.

19. (Previously presented) The method of claim 18, wherein the increasing step comprises:

representing each +1 pulse in the plurality of pulses with a positive pulse compression code; and

representing each -1 pulse in the plurality of pulses with a negative pulse compression code.

20. (Previously presented) The method of claim 18, wherein the increasing step comprises:

representing each +1 pulse in the plurality of pulses with two consecutive positive pulse compression codes; and

representing each -1 pulse in the plurality of pulses with a positive pulse compression code and a negative pulse compression code.

21. (Previously presented) The method of claim 18, wherein the increasing step comprises representing each pulse in the plurality of pulses with a Barker sequence.

22. (Previously presented) The method of claim 18, wherein the increasing step comprises:

time-offsetting a selected one of the code words to generate a plurality of shifted versions of the selected code word, and

overlapping the selected code word and the plurality of shifted versions to form a time-offset overlapped code word.

23. (Previously presented) The method of claim 22, further comprising adopting different orthogonal modulating frequencies for different shifted versions of the selected code word.

24. (Currently amended) A ~~memory of a~~ spread-spectrum-multiple access communication system, comprising a memory, the memory storing a spread-spectrum multiple access code,

wherein the spread-spectrum multiple access code comprises a train of pulses separated by intervals that are unequal in duration to each other and wherein the pulses each have a predetermined polarity, and wherein the spread-spectrum-multiple access communication system encodes data with the spread-spectrum multiple access code.

25. (Currently amended) The ~~memory~~ system of claim 24, wherein:

each pulse has a same duration, T; and

at least one interval is longer than a shortest one of the intervals by an odd integer multiple of the duration T.

26. (Currently amended) The ~~memory~~ system of claim 24, wherein any one interval is unequal in duration to a sum of any other two of the intervals.

27. (Currently amended) The ~~memory~~ system of claim 24, wherein:

an auto-correlation function of the code has a zero-correlation window; and

a width of the zero-correlation window is equal to two times a shortest one of the intervals.

28. (Cancelled)

29. (Currently amended) The ~~memory~~ system of claim 26, further comprising a positive compression code associated with each +1 pulse and a negative compression code associated with each -1 pulse.

30. (Currently amended) The ~~memory~~ system of claim 26, further comprising a Barker sequence associated with each pulse.

31. (Currently amended) A ~~memory of a~~ spread-spectrum-multiple access communication system, comprising a memory, the memory storing a spread-spectrum multiple access code, wherein the spread-spectrum multiple access code comprises a plurality of pulse compression codes each representative of one pulse of a train of pulses, wherein the pulses are separated by intervals that are unequal in duration to each other and wherein the pulses each have a predetermined polarity and wherein the spread-spectrum-multiple access communication system encodes data with the spread-spectrum multiple access code.

32. (Currently amended) The ~~memory~~ system of claim 31, wherein:

each pulse has a same duration, T; and

the duration of at least one interval is longer than the duration of a shortest interval by an amount equal to an odd integer multiple of the duration T.

33. (Currently amended) The ~~memory~~ system of claim 31, wherein any one interval is unequal in duration to a sum of any other two intervals.

34. (Currently amended) The ~~memory~~ system of claim 31, wherein:

an auto-correlation function of the code has a zero-correlation window; and

a width of the zero-correlation window is equal to two times a shortest one of the intervals.

35. (Cancelled)

36. (Currently amended) The ~~memory~~ system of claim 31, wherein the plurality of pulse compression codes comprise a positive compression code associated with a +1 pulse and a negative compression code associated with a -1 pulse.

37. (Currently amended) The ~~memory~~ system of claim 31, wherein each of the plurality of pulse compression codes comprises a Barker sequence.

Express Mail No.: EV 324 920 219 US
Date Mailed: August 6, 2004
Serial Number: 09/966,683 Filing Date: September 27, 2001
Inventors: Daoben Li
For: A SCHEME FOR SPREAD SPECTRUM MULTIPLE ACCESS CODING

Enclosed:

(✓) Response to Office Action w/3-month extension (duplicate page)
(✓) Corrected FIG. 1 (replacement sheet)
(✓) Return Postcard

File No. 061000-0006 **(Formerly 10748-006-999)** Sender: TDK/sjk